

SEVEN NEW SPECIES OF *HELICIA* LOUR. (PROTEACEAE) FROM PAPUA NEW GUINEA

by

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ABSTRACT

Foreman, D. B. Seven new species of *Helicia* Lour. (Proteaceae) from Papua New Guinea. *Muelleria* 6(1): 79-91 (1985). — Seven new species of *Helicia* Lour., *H. calocoma*, *H. insularis*, *H. laiagamensis*, *H. polysmoides*, *H. retusa*, *H. rostrata* and *H. subcordata*, are described and illustrated together with notes on distribution, habitat and diagnostic features.

INTRODUCTION

In a previous paper (Foreman 1983) three new species of *Helicia* from north Queensland were described together with descriptions of all the presently recognised Australian species. The main points made in the introduction to that paper are also relevant to this study and should be consulted.

The present paper provides names for the account of the Proteaceae being prepared by the author for the 'Handbooks of the Flora of Papua New Guinea' series. That account will include a key to all species of *Helicia* now recognised as occurring in Papua New Guinea together with descriptions and notes on distribution and habitat.

The geographical regions adopted by the 'Handbooks' series (Henty 1981) have been used in this paper.

TAXONOMY

Helicia calocoma D. Foreman, sp.nov.

Arbor ad 27 m alta. *Ramuli* teretes, atro-rufo-tomentosi. *Folii lamina* oblonga ad ellipticam, acuta ad acuminatam, ad basin cuneata vel interdum obliqua, integra, 16-22 cm longa, 6-7.5 cm lata, undique atro-rufo-tomentosa, supra glabrescens, subcoriacea ad coriaceam; nervorum 12-15 pares; petiolus 4-6 cm longus, atro-rufo-tomentosus. *Inflorescentia* ramiflora, 7-17 cm longa, atro-rufo-tomentosa. *Pedicelli* 2-4 mm longi, rufo-tomentosi. *Perianthium* 2.5 cm longum, dense rufo-tomentosum. *Ovarium* rufo-tomentosum. *Fructus* (immaturus) ellipsoideus ad \pm ovoideum, c. 3 x 1.5 cm, \pm rufo-tomentosus, glabrescens; pericarpium coriaceum.

Tree to 27 m tall. *Branchlets* terete, dark rufous-tomentose. *Leaf blade* oblong to elliptic, acute to acuminate, cuneate or sometimes oblique at the base, entire, 16-22 cm long, 6-7.5 cm wide, subcoriaceous to coriaceous, at first dark rufous-tomentose all over, later \pm glabrous and drying a dull green to yellowish-green above with some dark rufous hairs persisting along the midrib and main nerves, the undersurface remaining dark rufous-tomentose, midrib slightly raised above, very prominent beneath; nerves 12-15 pairs, flattened or slightly raised above, \pm straight in the lower two-thirds, becoming curved and interarched towards the margin; reticulations dense, slightly raised, clearly visible on both surfaces; petiole 4-6 cm long, dark rufous-tomentose. *Inflorescence* ramiflorous, 7-17 cm long, dark rufous-tomentose; rachis c. 3 mm diam. *Bract* subtending flower pairs (unit inflorescence) rufous-tomentose, ovate-acute, about 1.5 mm long; floral bracts \pm similar. *Peduncle* (of unit inflorescence) 2-2.5 mm long, rufous-tomentose. *Pedicels* 2-4 mm long, rufous-tomentose. *Perianth* 2.5 cm long, densely rufous-tomentose; limb 7 x 3.5 mm. *Anthers* 3-4 mm long. *Hypogynous glands* obtuse. *Ovary* ferruginous-tomentose; style glabrous. *Fruit* (immature) ellipsoid to \pm ovoid, about 3 x 1.5 cm, \pm rufous-tomentose, becoming glabrous, apex \pm pointed, base rounded; pericarp coriaceous. (Fig 1).

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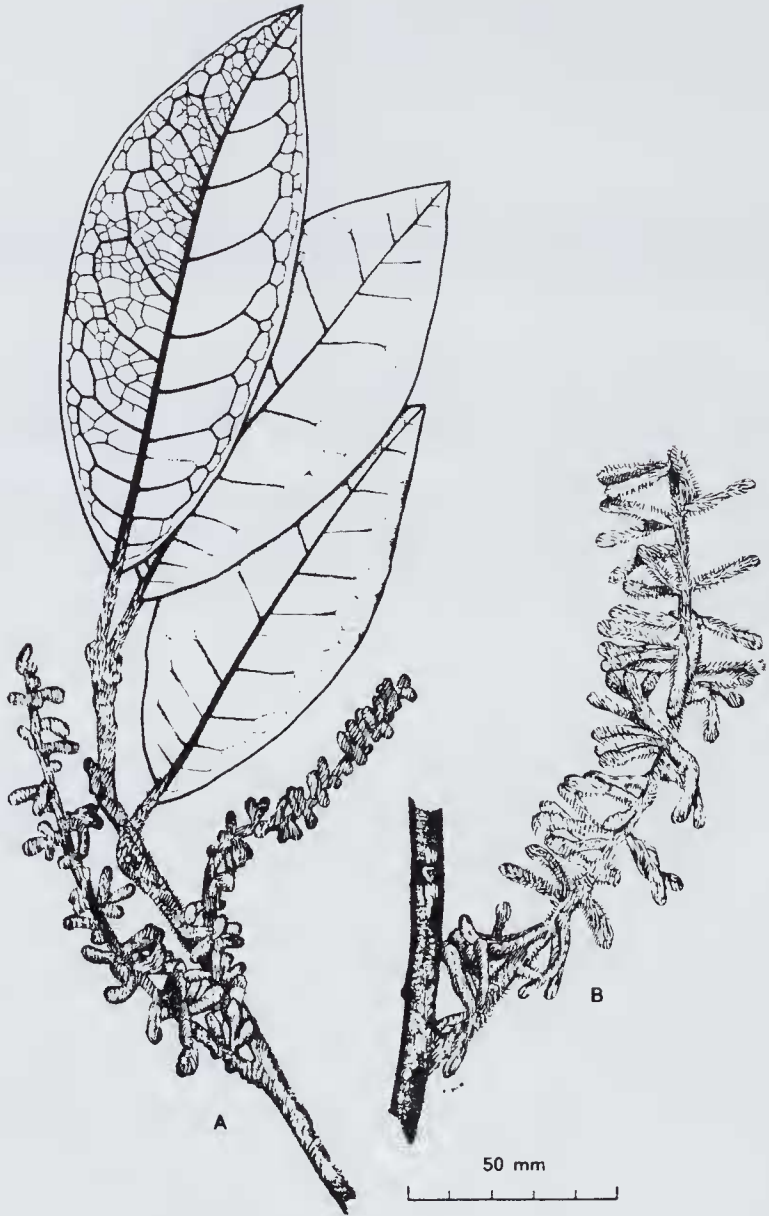


Fig. 1. *Helicia calocoma*. A — branchlet with young buds. B — inflorescence with almost mature buds. From the type collection.

TYPE COLLECTION:

Above Arora Village, Upper Wau Valley, Morobe district, northeastern New Guinea, 25.vi.1973, J. S. Womersley NGF 41248 (flowering collection). (Holotype: LAE. Isotypes: A, BRI, CANB, K, NSW).

FURTHER SPECIMEN EXAMINED:

Northeastern New Guinea, Morobe district — New Yamap, head of Biame Creek, 19.iii.1970, H. Streimann & A. Kairo NGF 47647 (A, BRI, A, BRI, CANB, K, LAE, NSW); Kaisinik, 44 km along N.N.G. logging road, 30.v.1976, A. Masapuhafo AM5 (LAE).

DISTRIBUTION AND HABITAT:

Known only from a restricted area in the Morobe district of northeastern New Guinea. Found in *Nothofagus* forest at altitudes ranging from 1200 — 2000 m.

DISCUSSION:

H. calocoma can be distinguished immediately from all other *Helicia* species in Papua New Guinea by its very long petioles and the very distinctive and attractive rufous-tomentose indumentum which completely covers the twigs, petioles, leaves and all parts of the inflorescence and flowers.

It is difficult to assess the relationships of *H. calocoma* and mature fruits, when found, may assist. The species shares an important combination of characters viz., ovary hairy, leaves and branchlets hairy to a greater or lesser degree and leaves entire or almost so, with a group of eight species that includes taxa such as *H. amplifolia* Sleum., *H. oreadam* Diels, *H. platyphylla* Sleum. and *H. sellae-montis* Sleum. However, none of these taxa has particularly long petioles nor do they in general have such a dense and persistent indumentum as is found in *H. calocoma*.

***Helicia insularis* D. Foreman, sp.nov.**

Arbor 8-15 m alta. *Ramuli* glabri; cicatrices foliorum prominentes. *Folii lamina* ± elliptica, mucronata ad obtusam, ad basin attenuata, integra, 5.5-12.5 cm longa, 3.5-6 cm lata, glabra, chartacea; nervorum c. 8 pares; petiolus 5-8 mm longus. *Inflorescentiae* in axillis superis, c. 5.5 cm longae, glabrae. *Pedicelli* 3 mm longi, glabri. *Perianthium* 13 mm longum, album, glabrum. *Ovarium* glabrum. *Fructus* (immaturus) globosus, glaber.

Tree 8-15 m tall. *Branchlets* glabrous, with prominent leaf-base scars. *Leaf blade* ± elliptic, mucronate to obtuse, attenuate at the base and decurrent onto the petiole, entire, 5.5-12.5 cm long, 3.5-6 cm wide, glabrous, chartaceous to subcoriaceous, drying mid- to dark-green above, mid-brown beneath; midrib raised above, prominent beneath; nerves about 8 pairs, curved upwardly, becoming fainter towards the margin, slightly raised above, raised but fine beneath; reticulations dense, slightly raised on both surfaces; petiole 5-8 mm long, stout. *Inflorescence* axillary, borne towards the ends of the twigs, about 5.5 cm long, glabrous, rachis 1.5 mm diameter. *Bract* subtending flower pairs ovate-acute, 1 mm long; floral bracts slightly smaller. *Peduncle* c. 0.4 mm long, glabrous. *Pedicels* 3 mm long, glabrous. *Perianth* white, 13 mm long, glabrous; limb 3.5 x 1.5 mm. *Anthers* c. 3 mm long. *Hypogynous glands* connate into a crenulate cup. *Ovary* glabrous; style glabrous. *Fruit* (immature) globose, glabrous; pericarp appears homogeneous. (Fig. 2).

TYPE COLLECTION:

Mt. Pabinana, Normanby Island, Papuan Islands, Papua, 2.v.1956, L. J. Brass 25650 (flowering collection). (Holotype: LAE. Isotype: L, n.v.).

FURTHER SPECIMEN EXAMINED:

Papua, Papuan Islands — Between Agamoia and Ailuluai, Fergusson Island, 9.vi.1956, L. J. Brass 27042 (L, LAE).

DISTRIBUTION AND HABITAT:

H. insularis is known only from Normanby and Fergusson Islands in the Papuan Islands district and it is this insular location which the specific epithet alludes to. Occurs in mossy forest at altitudes ranging from 800-950 m.

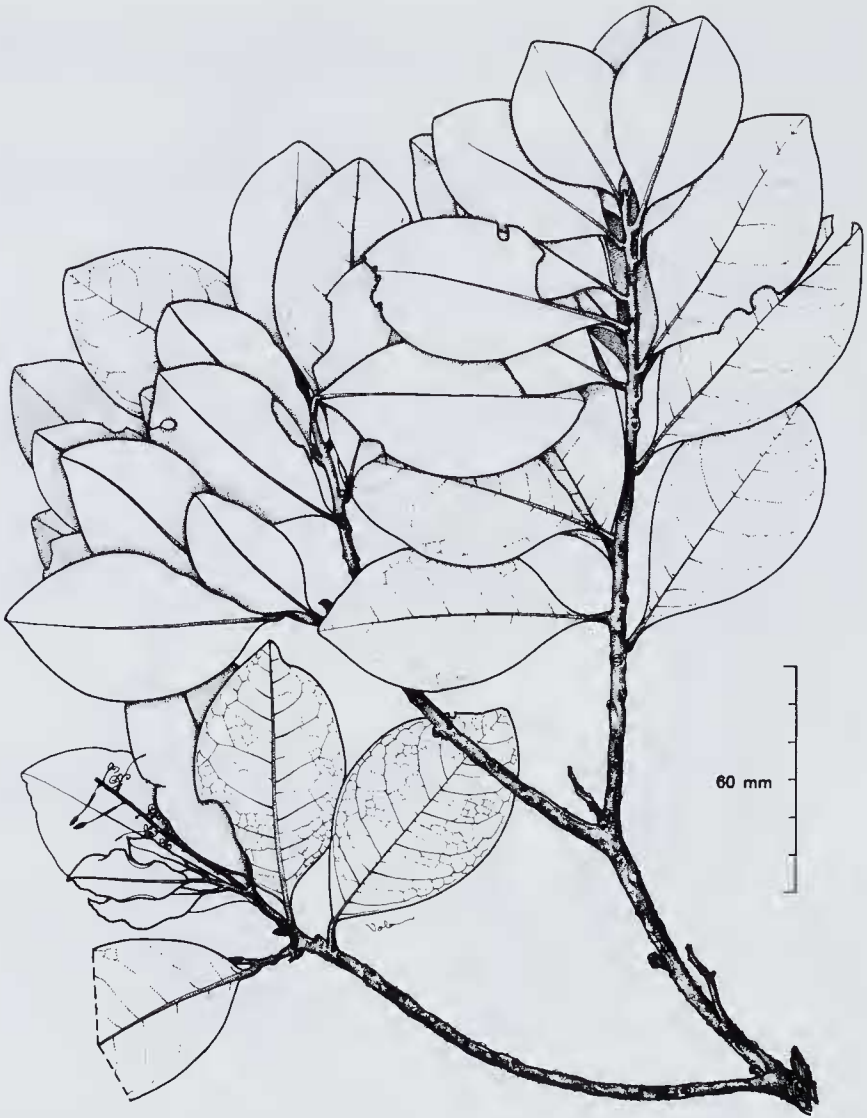


Fig. 2. *Helicia insularis*. Flowering branchlet. Note that the nerves are very difficult to see in the actual specimen, particularly towards the margin; they have been slightly over-emphasised in the drawing. From the type collection.

DISCUSSION:

The most notable difference between *H. insularis* and other *Helicia* species in New Guinea is that it is apparently the only one in which the main lateral veins are not clearly visible at the margin of the leaf on either surface. In most species the veins can usually be seen distinctly on the lower surface even if they are obscure above.

In most leaf, inflorescence and flower characters *H. insularis* appears most closely related to *H. odorata* Diels, a relatively common and widespread species. Although *H. odorata* is not known from either Normanby or Fergusson Islands it has been collected from Mt Goë (in the Mt Suckling complex), Mt Dayman and Mt Simpson in the adjacent Milne Bay district.

***Helicia laiagamensis* D. Foreman, sp.nov.**

Arbor parva ad 10 m alta. *Ramuli* teretes, atro-ferruginoso-tomentosi, glabrescentes. *Folii lamina* plerumque elliptica, interdum obovata, acuta, ad basin cuneata, integra (juvenalis interdum sparsim dentata), 6-16 cm longa, 2.7-6.2 cm lata, undique ferruginoso-tomentosa, supra glabrescens, infra indumento praecipue secus costam et nervos principales persistenti, chartacea ad subcoriacea; nervorum 7-10 pares; petiolus 7-14 mm longus, atro-ferruginoso-tomentosus, glabrescens. *Inflorescentia* axillaris vel ramiflorus, 11.5-33.5 cm longa, dense ferruginoso-appresso-tomentosa. *Pedicelli* 3-4.5 mm longi, ferruginoso-tomentosi. *Perianthium* 8.5-11 mm longum, ferruginoso-appresso-tomentosum. *Ovarium* rufo-tomentosum. *Fructus* ± globosus, 2.5 cm diam., glaber; pericarpium homogenum, 1.5-2 mm crassum; pedicellus crassus, 2.3 mm longus. *Semen* globosum, 2 cm diam.

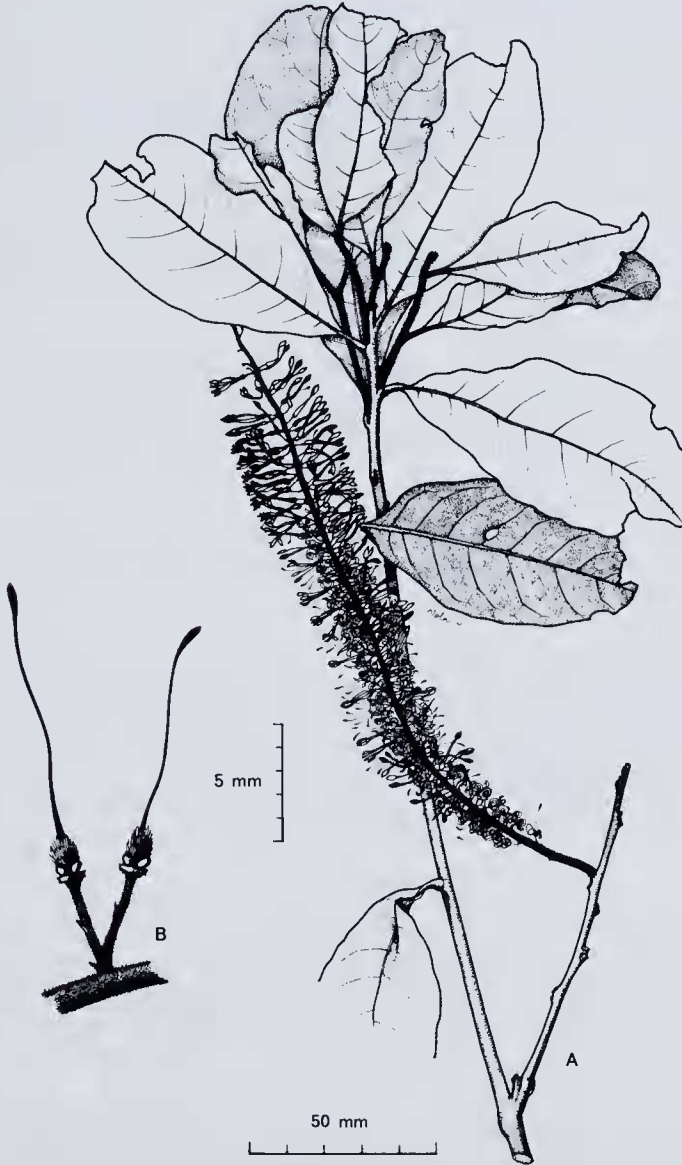


Fig. 3. *Helicia laiagamensis*. A — flowering branchlet. B — a pair of flowers (unit inflorescence) with the perianth parts removed. From the type collection.

Small tree to 10 m tall. *Branchlets* terete, dark ferruginous-tomentose, glabrescent. *Leaf blade* mostly elliptic, occasionally obovate, acute, cuneate at the base, entire or sometimes with one or two pairs of irregularly spaced teeth on young leaves, 6-15 cm long, 2.7-6.2 cm wide, chartaceous to subcoriaceous, ferruginous-tomentose on both surfaces when young, becoming glabrous or with a few hairs persisting along the midrib above, the hairs persisting beneath especially along the midrib and main veins, the blade drying olivaceous above, mid- to dark-brown beneath; midrib slightly raised above, raised and prominent beneath; nerves 7-10 pairs, curved upwardly, slightly impressed or flattened above, prominent beneath; reticulations impressed above, slightly raised beneath; petiole 7-14 mm long, dark-ferruginous-tomentose, glabrescent. *Inflorescence* axillary or ramiflorous, 11.5-33.5 cm long, densely appressed ferruginous-tomentose; rachis 1.5-2 mm diam. *Bract* subtending flower pairs ferruginous-tomentose, ovate-acute, 1 mm long, floral bracts \pm similar. *Peduncle* 3-4.5 mm long, ferruginous-tomentose. *Pedicel* 3-4.5 mm long, ferruginous-tomentose. *Perianth* creamy-white, 8.5-11 mm long, appressed ferruginous-tomentose; limb 4 x 1.5 mm. *Anthers* 2.5-3 mm long. *Hypogynous glands* free, broadly rounded. *Ovary* rufous-tomentose; style slender, glabrous. *Fruit* \pm globose, 2.5 cm diam., glabrous; pericarp homogeneous, 1.5-2 mm thick. *Seed* globose, 2 cm diam. *Fruit pedicel* stout, 3-5 mm long, 2-3 mm wide. (Fig 3.).

TYPE COLLECTION:

Near Kepilam Village, Western Highlands district, northeastern New Guinea, 4.viii.1960, R. D. Hoogland & R. Schodde 7321 (flowering and fruiting collection). (Holotype: LAE. Isotype: CANB).

FURTHER SPECIMENS EXAMINED:

Northeastern New Guinea. Western Highlands district — near Lake Inim, near Wabag, 8.v.1965, J. R. Flenley 2768 (CANB, LAE); road from Sirunki to Laiagam, 3.viii.1960, R. G. Robbins 3176 (CANB, LAE); near Sirunki, viii.1962, Walker ANU 490 (CANB, LAE). Mt Kum near Mt Hagen, 7.v.1957, J. S. Womersley NGF 9416 (LAE); midway between Sirunki and Laiagam, 11.vii.1971, J. S. Womersley & B.C. Stone NGF 43771 (LAE).

DISTRIBUTION AND HABITAT:

Known only from a restricted area in the Western Highlands district of northeastern New Guinea. Found in primary or secondary montane forest, at altitudes ranging from 2100 — 3000 m.

DISCUSSION:

All specimens come from the Laiagam region in the Western Highlands district of northeastern New Guinea and this localized distribution is the basis for the specific epithet.

Similarities of flower and fruit characters show the close affinities of *H. laiagamensis* to *H. sellae-montis* a species which is widespread throughout the Morobe and Eastern Highlands districts of northeastern New Guinea. *H. laiagamensis* differs from *H. sellae-montis* in having a longer petiole and a leaf blade which is relatively smaller and elliptic in shape; the leaf blade of *H. sellae-montis* is narrow-oblong to obovate.

***Helicia polyosmoides* D. Foreman, sp.nov.**

Arbor 6-15 m alta. *Ramuli* teretes, glabri. *Folii lamina* elliptica, acuta, ad basin attenuata, integra, 12.5-27 cm longa, 5.5-11 cm lata, glabra, coriacea; nervorum ad 10 pares; petiolus 1.5-3 cm longus, ad basin tumidus et rugosus. *Inflorescentia* axillaris ad subterminalem, 13-2 cm longa, parce ferruginoso-pilosa. *Pedicelli* ad 6 mm longi, ferruginoso-pilosi. *Perianthium* 2.5 cm longum, album limbo creceo, glabrum. *Ovarium* glabrum. *Fructus* ellipsoideus, 1.5 x 1 cm, nitens, atro-caeruleus; pericarpium homogenum, laeve, 1 mm crassum; pedicellus gracilis, 10 x 2 mm.

Tree 6-15 m tall. *Branchlets* terete, striate, glabrous. *Leaf blade* elliptic, acute, attenuate at the base and decurrent on the petiole, entire, 12.5-27 cm long, 5.5-11 cm wide, glabrous, coriaceous, drying yellow-green; midrib slightly raised above, prominent beneath; nerves up to 10 pairs, slightly raised above, raised and clearly defined beneath, curving upwardly and interarching near the margin; reticulations dense, slightly raised on both surfaces; petiole

1.5-3.0 cm, glabrous, swollen and rugose at the base. *Inflorescence* axillary to subterminal, 13-22 cm long, sparsely ferruginous pilose; rachis 2 mm diam. *Bract* subtending flower pairs glabrous, acuminate, 1.5 mm long, floral bracts \pm similar. *Peduncle* 0.5-1mm long, ferruginous-pilose. *Pedicels* up to 6 mm long, ferruginous-pilose. *Perianth* white with a cream limb, 2.5 cm long, glabrous; limb 3-3.5 x 1.5 mm. *Anthers* 2 mm long. *Hypogynous glands* free or connate at the base, truncate. *Ovary* glabrous; style slender, glabrous. *Infructescence* 15-19 cm long. *Fruit* ellipsoid, 1.5 x 1.0 cm, shiny, very dark blue almost black; pericarp smooth, homogeneous, 1 mm thick. *Seed* white, ellipsoid, 10 x 8 mm. *Fruit pedicel* slender, 10 x 2 mm. (Fig. 4).

TYPE COLLECTION:

Near Derimbat Village, Manus Island, Bismarck Archipelago, 30.x.1974, *D. Foreman & P. Katik* LAE 59251 (flowering and fruiting collection). (Holotype: LAE. Isotypes: A, BRI, CANB, K, L and NSW).

FURTHER SPECIMENS EXAMINED:

Bismarck Archipelago — Mt Dremsel, Manus Island, 26.x.1974, *D. Foreman and P. Katik* LAE 59167 (A, BRI, CANB, K, L, LAE, MUN); near Derimbat Village, Manus Island, 21.vi.1971, *B. C. Stone and H. Streimann* LAE 53659 (A, BRI, CANB, K, L, LAE).

DISTRIBUTION AND HABITAT:

Known only from Manus Island in the Bismarck Archipelago where it appears to be locally common. Occurs in rainforest on ridges at altitudes of from 100 — c. 600m.

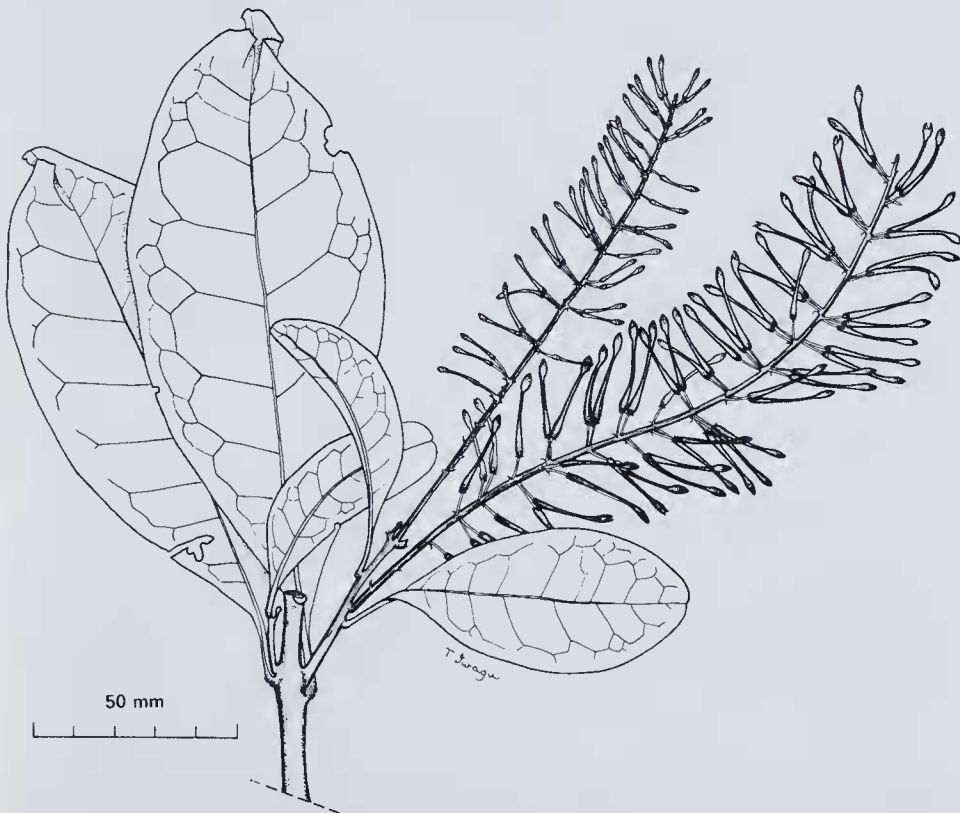


Fig. 4. *Helicia polyosmoides*. Flowering branchlet. From the type collection.

DISCUSSION:

In fruit *H. polyosmoides* shows a remarkable resemblance to a common species of *Polyosma* (Escalloniaceae) on Manus Island, hence the specific epithet. The two species are often found growing under similar ecological conditions.

Of the *Helicia* species occurring in the Bismark Archipelago *H. polyosmoides* is apparently most closely related to *H. hypoglauca* Diels, a widespread species which is also found on the main island of New Guinea. *H. polyosmoides* differs from *H. hypoglauca* in having longer and wider leaves which are glabrous and have more prominent venation. The flowers and fruits of both species are quite similar, the flowers of *H. polyosmoides* being slightly longer and glabrous.

***Helicia retusa* D. Foreman, sp.nov.**

Arbor 3-8 m alta. *Ramuli* teretes, ad apices ferruginoso-tomentosi, glabrescentes. *Folii lamina* elliptica, retusa, ad basin breviter attenuata, integra, 6-9 cm longa, 2.5-5 cm lata, supra ferruginoso-tomentosa, glabrescens, infra rufo- vel atro-ferruginoso-tomentosa, glabrescens, coriacea; nervorum 5-7 pares; petiolus 1-1.5 cm longus, gracilis, ferruginoso-tomentosus, glabrescens. *Inflorescentia* ramiflora, 6-8.5 cm longa, ferruginoso-tomentosa. *Pedicelli* 2.5 mm longi, ferruginoso-tomentosi. *Perianthium* 2-2.5 cm longum, laxe ferruginoso-tomentosum. *Ovarium* glabrum. *Fructus* ± globosus, acutus, ad basin breviter attenuatus, 5 x 3.5 cm, purpureus, glaucus; pericarpium laeve, strato exteriori coriaceo ad carnosum, 2 mm crasso, interiori fibroso, 3 mm crasso; pedicellus crassus, 5 x 4 mm. *Semen* ovoideum, 3.5 x 2.5 cm.

Tree 3-8 m tall. *Branchlets* terete, ferruginous-tomentose towards the tip, glabrescent and grey lower down. *Leaf blade* elliptic, retuse, shortly attenuate at the base, entire, 4-9 cm long, 2.5-5 cm wide, coriaceous, the upper surface at first ferruginous-tomentose but becoming ± glabrous between the nerves with some hairs persisting along the midrib, the lower surface rufous or dark ferruginous-tomentose, becoming ± glabrous with a few hairs persisting along the midrib and main veins, the blade drying ± olivaceous above, light- to mid-brown beneath; midrib slightly raised above, very prominent beneath; nerves 5-7 pairs, flattened to slightly raised above, raised and prominent beneath, curved upwardly, inter-arching near the margin; reticulations dense, impressed above, slightly raised beneath; petiole 1.0-1.5 cm long, slender, ferruginous-tomentose at first, becoming glabrous. *Inflorescence* ramiflorous, 6-8.5 cm long, ferruginous-tomentose; rachis 2.5 mm diam. *Bract* subtending flower pairs ferruginous tomentose, acuminate, about 2 mm long; floral bracts ± similar. *Peduncle* 0.5 mm long, ferruginous-tomentose. *Pedicels* 2.5 mm long, ferruginous-tomentose. *Perianth* 2-2.5 cm long, laxly ferruginous-tomentose; limb 3 x 1.5 mm. *Anthers* 2.5 mm long. *Hypogynous glands* connate into a low crenulate cup. *Ovary* glabrous; style glabrous, yellowish. *Fruit* ± globose, 5.0 x 3.5 cm, ± pointed, shortly attenuate at the base, purple with a whitish bloom; pericarp smooth, outer zone coriaceous to fleshy, 2 mm thick, inner zone of fibres, 3 mm thick. *Seed* ovoid, 3.5 x 2.5 cm. *Fruit pedicel* stout, 5 x 4 mm. (Fig.5).

TYPE COLLECTION:

Mt Duau, above Agaun, Milne Bay district, Papua, 1.ii.1973, P. F. Stevens LAE 58130 (flowering and fruiting collection). (Holotype: LAE. Isotypes: BRI, L).

FURTHER SPECIMEN EXAMINED:

Papua. Milne Bay district — Ridge between Mayu and Pununiwa Rivers, Mt Suckling complex, 10.vi.1972, P. Stevens & J. Veldkamp LAE 54001 (A, BRI, CANB, K, L, LAE).

DISTRIBUTION AND HABITAT:

Known only from the vicinity of the Mt. Suckling complex in the Milne Bay district of Papua. Occurs in open ridge forest at altitudes of 1600-1860 m.

DISCUSSION:

Apart from *H. retusa* the only other *Helicia* species in Papua New Guinea which consistently has a retuse leaf apex is *H. retevenia* Sleum. which is known only from the flowering type collection made near Mt Victoria several hundred kilometres to the north-west of Mt Suckling. The lack of fruiting collections of *H. retevenia* makes it difficult to assess the relationship between these two species. *H. retusa* is readily distinguished from *H.*

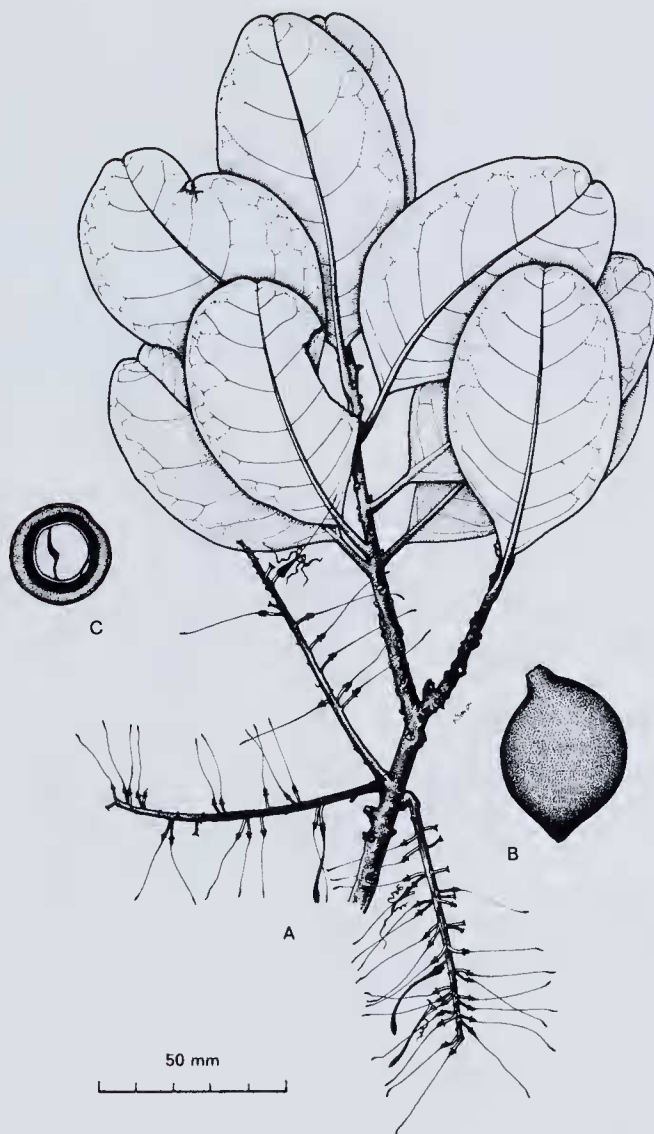


Fig. 5. *Helicia retusa*. A — flowering branchlet. B — mature fruit. C — cross-section through a mature fruit showing the seed. From the type collection.

retevenia as the former species has longer petioles, elliptic rather than obovate-oblong leaf blades, much longer flowers and usually some hairs persisting on the leaf undersurface.

A comparison of flower and fruit characters indicates that *H. retusa* is closely related to *H. albiflora* Sleum., a species which is widespread throughout the Morobe, Eastern Highlands and Western Highlands district of northeastern New Guinea and the Central and Northern districts of Papua. The leaves of *H. retusa* differ from those of *H. albiflora* by having shorter narrower blades and shorter petioles.

***Helicia rostrata* D. Foreman, sp.nov.**

Arbor parva, 1-5 m alta. *Ramuli teretes*, graciles, ad apices rufo-tomentosi, glabrescentes. *Folii lamina lanceolata*, rostrata, ad basin attenuata, serrata, 3.5-5.5 cm longa, 0.9-1.5 cm lata, supra glabra, infra parce ferruginoso-tomentosa ad fere glabram, chartacea; nervorum 7-9 pares; petiolus 1-4 mm longus,

laxe rufo-tomentosa. *Inflorescentia* axillaris, 4-6 cm longa, laxe rufo-tomentosa. *Pedicelli* 2-2.5 mm longi, rufo-tomentosi. *Perianthium* 8-10 mm longum, brunneo-album, \pm glabrum. *Ovarium* rufo-tomentosum. *Fructus* ignotus.

Small tree 1-5 m tall. *Branchlets* terete, slender, rufous-tomentose towards the tips, glabrescent lower down. *Leaf blade* lanceolate, rostrate, attenuate at the base, serrate, 3.5-5.5 cm long, 0.9-1.5 cm wide, chartaceous, glabrous above, sparsely ferruginous-tomentose to almost glabrous beneath, drying light green or light brown on both surfaces; midrib sunken above, \pm raised and prominent beneath; nerves 7-9 pairs, slightly raised on both surfaces, \pm straight in the lower two-thirds, curved upwardly and interarching near the margin; reticulations dense and well defined on both surfaces; petiole 1-4 mm long, sparsely rufous-tomentose, base slightly swollen. *Inflorescence* axillary, 4-6 cm long, sparsely rufous-tomentose; rachis 0.6 mm diam. *Bract* subtending flower pairs ovate-acute, rufous-tomentose, floral bracts \pm similar. *Peduncle* 0.5 mm long, rufous-tomentose. *Pedicels* 2-2.5 mm long, rufous-tomentose. *Perianth* brownish-white, 8-10 mm long, \pm glabrous, very sparsely ferruginous- to rufous-tomentose; limb 3 x 1.4 mm. *Anthers* c. 2 mm long. *Hypogynous glands* free, \pm rounded. *Ovary* rufous-tomentose; style filiform, glabrous. Fruit not known. (Fig.6).



Fig. 6. *Helicia rostrata*. A — flowering branchlet. b — a pair of flowers with the perianth parts removed. From the type collection.

TYPE COLLECTION:

Maneau Range, north slopes of Mt Dayman, Milne Bay district, Papua, 7.vi.1953, L.J. Brass 22820 (flowering collection). (Holotype: LAE. Isotype: A).

FURTHER SPECIMEN EXAMINED:

Papua, Milne Bay district — Maneau Range, Mt Dayman, 30.v.1953, L. J. Brass 22682(A).

DISTRIBUTION AND HABITAT:

H. rostrata apparently has a localized distribution, being represented only by the two cited collections from Mt Dayman in the Milne Bay district of Papua collected by L. J. Brass in 1953. The species was not located on a more recent expedition in 1972 to the nearby Mt Suckling complex about 50 kilometres north-west of Mt Dayman (Stevens, 1972 pers.comm.). Likewise there are no known specimens of *H. rostrata* from Mt Simpson, about 35 km to the south-east of the Mt Suckling complex, although this mountain is not well known botanically.

H. rostrata occurs in *Nothofagus* forest on ridge crests and in the understorey of mossy forest, at altitudes from 2050-2200 m.

DISCUSSION:

In habit, most floral characters and some leaf characters, *H. rostrata* closely resembles *H. microneura* C.T. White which is relatively widespread and has been collected from the Mt Suckling region. This similarity is interesting because of the resemblance between *H. microneura* and the widespread Australian species *H. glabriflora* F. Muell. Although the perianth of *H. microneura* is much shorter than that of *H. glabrifolia* the fruits of the two species are \pm identical and the leaves are similar in many characters. Unfortunately the fruits of *H. rostrata* are unknown so a complete comparison of these three species is not yet possible.

***Helicia subcordata* D. Foreman, sp. nov.**

Arbor 24 m alta. *Ramuli* teretes, crassi, glabri. *Folii lamina* obovata ad parum panduratum, ad apicem rotundata, ad basin subcordata, integra, 24.5-33.5 cm longa, c. 11 cm lata, glabra, coriacea; nervorum c. 17 pares; petiolus crassus, rugosus, 6-10 x 7-8 mm. *Inflorescentia* ramiflora, 10-16 cm longa, glabra. *Pedicelli* graciles, c. 7-8 mm longi, glabri. *Perianthium* 2.8-3.2 cm longum, cremeo-alba, glabrum. *Ovarium* glabrum; pollinis praebitor caeruleus. *Fructus* ignotus.

Tree 24 m tall. *Branchlets* terete, stout, glabrous. *Leaf blade* obovate to slightly pandurate, rounded at the tip, subcordate, entire, 24.5-33.5 cm long, c. 11 cm wide, coriaceous, glabrous, drying olivaceous above, light-brown beneath, and shiny on both surfaces; midrib slightly raised above, raised and prominent beneath; nerves about 17 pairs, \pm flattened above, raised and prominent beneath, curved upwardly and interarching near the margin; reticulations dense, slightly raised on both surfaces; petiole stout and rugose, 6-10 x 7-8 mm. *Inflorescence* ramiflorous, 10-16 cm long, glabrous; rachis 2 mm diam. *Bract* subtending flower pairs ovate-acute, about 1 mm long, glabrous; floral bracts \pm similar. *Peduncle* 1-2 mm long, glabrous. *Pedicels* slender, c. 7-8 mm long, glabrous. *Perianth* creamish-white, 2.8-3.2 cm long, glabrous; limb 5-6 x 1.5 mm. *Anthers* c. 4 mm long. *Hypogynous glands* free, broadly rounded. *Ovary* glabrous; style slender, glabrous; pollen presenter bright blue. *Fruit* not known. (Fig. 7).

TYPE COLLECTION:

Near Wagau, Morobe district, northeastern New Guinea, 3.xi.1963, J. S. Womersley NGF 17903 (flowering collection). (Holotype: LAE. Isotypes: A, BRI, CANB, L, NSW).

DISTRIBUTION AND HABITAT:

Known only from the type collection. Occurs in open, mid-montane forest at an altitude of 1370 m.

DISCUSSION:

H. subcordata can be distinguished immediately from all other New Guinea species by the subcordate leaf base.

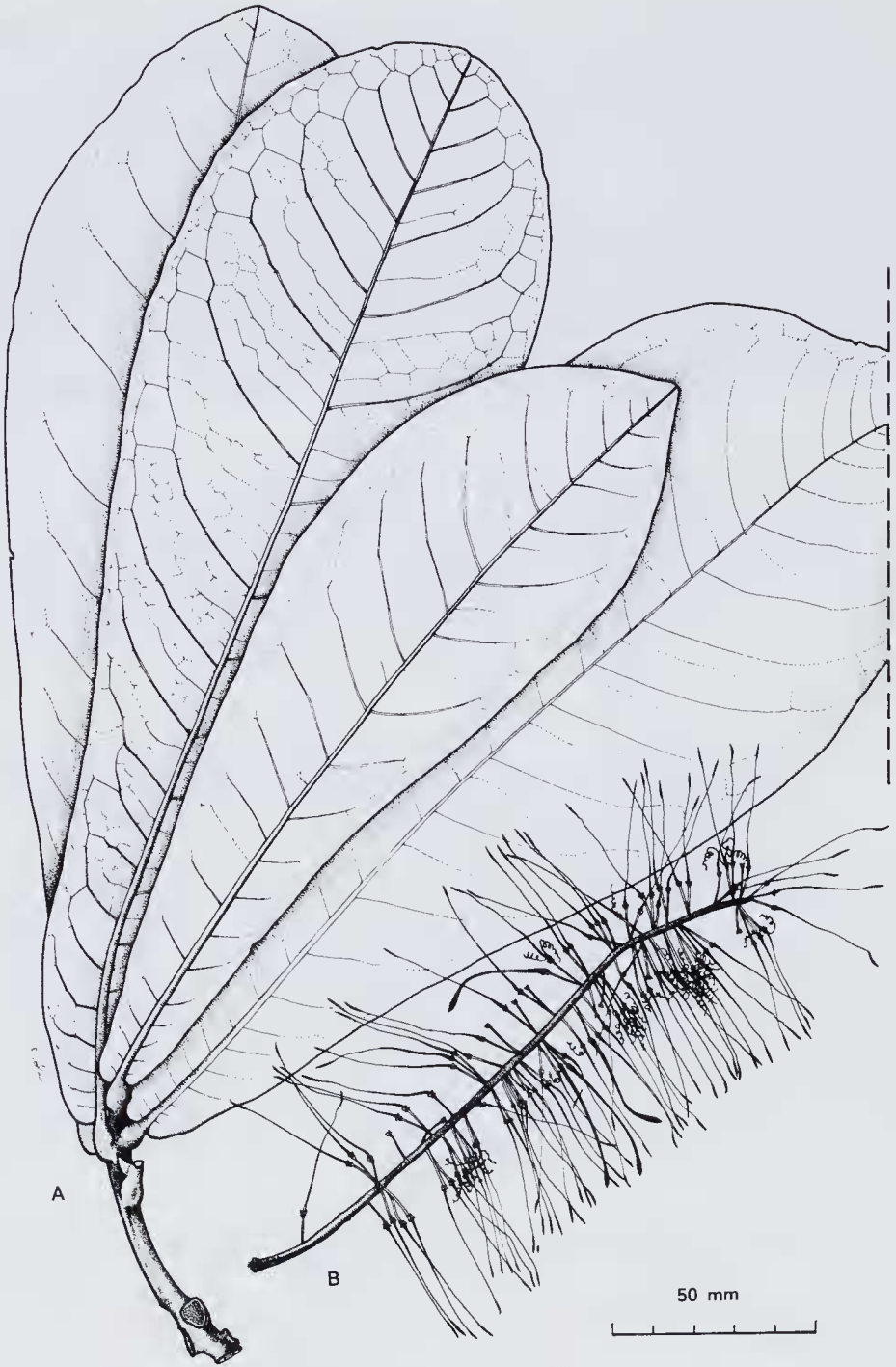


Fig. 7. *Helicia subcordata*. A — leafy branchlet. B — inflorescence with most of the flowers after anthesis; a few mature buds are also present. From the type collection.

In flower colour and size *H. subcordata* resembles the relatively common, widespread and somewhat variable *H. forbesiana* F. Muell. The flowers and the inflorescences of *H. subcordata* differ from those of *H. forbesiana* in being completely glabrous rather than sparsely rufous-tomentose. The pedicels of *H. subcordata* also tend to be slightly longer and are more slender than those of *H. forbesiana*. Some specimens of *H. forbesiana* have leaves which are \pm similar in size and shape (although lacking the subcordate base) to those of *H. subcordata* and the petioles of *H. forbesiana* tend to be longer and less rugose. Unfortunately the fruit of *H. subcordata* is not known.

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